

Supplementary Tables

Supplementary Table S1. Characteristic features of the rice parental genotypes used in the experiment

Variety name	Character
Chinigura	Chinigura is a variety of aromatic rice mostly popular and cultivated in Bangladesh. This rice variety is white thin and long in size with a little bit of round lower edge and pointy head.
Double rice	A Chinese land race having multiple grained rice, the unique rice variety that has two grains in a single rice seed, quite similar to 'Biram Sundori of Bangladesh or 'Laila Majnu ' of Nepal having two (sometimes three) grains in rice seed.
Kataktara	A moderately drought-tolerant variety at the seedling stage. local popular fine grain variety for regular consumption, suitable for broadcast/direct-seeded upland Aus rice ecosystem.
Muktagacha	It is a local variety of extra-long and slender grain, cultivated in the Aman rice ecosystem.
Pokkali	Pokkali is a unique saline tolerant rice variety that is cultivated using extensive aquaculture in an organic way in the water-logged coastal regions. Pokkali is farmed for its peculiar taste and its high protein content, grains are large. In the past, Pokkali provided the energy to fishermen to stay at sea all day long.
Basmati	Basmati is a variety of long, slender-grained rice which is traditionally from the Indian subcontinent, has a typical pandan-like flavor caused by the aroma compound 2-acetyl 1 pyrroline, giving basmati its distinctive spicy fragrance and flavor.
BRRI dhan 29	A popular Boro season variety of Bangladesh Rice Research Institute (BRRI), Plant height 90 cm, rice medium slender and white, high yielding, most popular term as "mega variety" of Bangladesh.

Supplementary Table S2. Marker used for the genotyping parents

RAPD primer	Sequence	Annealing Temperature (°C)
OPA -01	CAGGCCCTTC	42
OPA -02	TGCCGAGCTG	40
OPA -03	AGTCAGCCAC	38
OPA -04	AATCGGGCTG	38
OPA -05	AGGGGTCTTG	40
OPA -06	GGTCCCTGAC	40
OPA -07	GAAACGGGTG	40

Supplementary Table S3. PCR ingredients for RAPD Markers

Ingredients name	Volume required
H ₂ O	3.5 µL
Master mix	7.5 µL
Primer	1.0 µL
DNA	2 µL

Supplementary Table S4. Analysis of variance (ANOVA) of the ten yield and yield contributing traits in a 7 × 7 diallel population of rice

Item	Df	PPF	DFF	PHT	TNH	PL	FGP	GL	TGW	GTW	GYH
GCA	6	120.3838**	96.1825**	1793.3727**	28.252**	32.7176**	6339.0854**	4.7163**	24.4501**	0.0735**	110.5046**
SCA	21	98.2816**	63.8492**	232.123**	16.8152**	10.009**	2545.8613**	0.4116**	6.4536**	0.0312**	50.3655**
Error	27	0.0036	1.7582	12.2642	1.3151	2.2432	2.7385	0.0384	0.7087	0.0041	3.1143
GCA:SCA		1.2248	1.5064	7.7260	1.7455	3.2688	2.4899	11.4584	3.7886	2.3558	2.1941

PPF = Percent Pollen fertility, DFF = Days to first flowering, PHT = Plant height (cm), TNH = Tillers/hill, PLT = Panicle length (cm), FGN = Filled grains/panicle, GLT = Grain length (mm), TGW = Thousand grain weight (g), GTW = Grain test weight (g/5 mL), GYP = Grain yield/plant (g)

** significant at 1% level.

Supplementary Table S5. Mean values of ten yield and yield-related traits of the parents and F1 hybrids in a 7 × 7 diallel population of rice

Genotype	Trait	PF	DFF	PH	TNH	PL	FGP	GL	TGW	GTW	GYP
Parent											
Basmati		93.33	83.00	124.75	8.75	28.61	125.75	9.83	20.80	2.47	18.95
Muktagaccha		91.20	91.00	146.00	6.25	29.24	164.50	10.96	20.85	2.53	13.16
Double Rice		61.56	98.50	156.25	9.00	23.12	102.25	8.92	25.42	2.76	13.69
Pokkali		91.42	79.00	117.00	8.75	20.89	46.50	8.09	19.03	2.67	2.05
BRRI dhan 29		85.66	93.00	104.50	5.00	26.45	108.13	8.81	18.95	2.67	8.18
Kotoktara		95.00	87.50	123.00	6.25	20.63	62.00	8.37	18.02	2.84	5.90
Chinigura		96.16	95.00	162.88	10.25	24.43	174.38	6.10	12.25	3.23	17.31
Hybrids											
Basmati ×Muktagaccha		90.32	75.00	141.25	8.75	30.95	160.50	10.19	20.85	2.76	23.78
Basmati ×Double Rice		96.83	93.00	165.00	7.25	27.28	107.75	8.81	23.15	3.22	15.77
Basmati ×Pokkali		69.81	81.50	131.00	13.50	27.07	62.00	9.23	22.15	2.89	7.70
Basmati ×BRRI dhan 29		97.37	88.00	115.25	10.50	27.99	102.75	9.25	21.20	2.81	11.94
Basmati ×Kotoktara		80.66	81.00	120.50	7.00	26.13	69.75	9.09	21.70	2.90	5.79
Basmati ×Chinigura		94.85	95.00	149.00	14.75	26.93	106.38	7.08	14.75	2.63	13.60
Muktagaccha ×Double Rice		86.54	90.00	173.75	8.00	26.57	95.38	9.68	21.50	2.72	10.70
Muktagaccha ×Pokkali		94.12	79.00	143.00	11.50	28.30	157.31	8.45	20.90	2.89	17.58
Muktagaccha ×BRRI dhan 29		93.56	81.00	126.50	7.50	28.10	134.88	10.40	21.35	2.50	12.08
Muktagaccha ×Kotoktara		87.19	82.00	127.75	6.75	23.00	79.00	9.80	23.05	2.82	7.94
Muktagaccha ×Chinigura		96.79	74.00	165.75	8.00	30.72	203.88	7.43	25.30	2.88	13.57
Double Rice ×Pokkali		96.16	92.00	179.00	7.50	30.82	249.50	9.85	24.20	2.78	26.74
Double Rice ×BRRI dhan 29		85.39	71.50	101.25	9.00	18.30	23.00	8.80	18.58	2.94	1.49
Double Rice ×Kotoktara		86.63	81.50	132.50	6.75	21.68	74.63	10.22	23.55	2.95	4.61
Double Rice ×Chinigura		87.39	92.50	173.25	11.75	28.39	164.25	8.15	25.30	2.84	21.10
Pokkali ×BRRI dhan 29		94.08	67.00	109.50	8.50	18.84	34.88	8.16	17.19	2.69	1.34
Pokkali ×Kotoktara		59.19	70.50	121.50	14.00	26.84	62.38	7.89	19.70	2.94	6.19
Pokkali ×Chinigura		96.22	79.00	144.00	28.00	25.10	73.00	7.64	17.60	3.14	29.60
BRRI dhan 29 ×Kotoktara		82.95	81.50	97.30	12.50	19.31	30.54	8.64	21.17	2.95	4.96
BRRI dhan 29 ×Chinigura		96.74	73.50	149.00	10.25	27.83	206.88	6.55	15.05	3.20	24.44
Kotoktara ×Chinigura		96.10	78.50	98.50	5.75	18.89	63.25	8.19	18.60	3.01	2.02

PPF = Percent Pollen fertility, DFF = Days to first flowering, PHT = Plant height (cm), TNH = Tillers/hill, PLT = Panicle length (cm), FGN = Filled grains/panicle, GLT = Grain length (

Supplementary Table S6. Estimates of general combining ability (GCA) effects for ten yield and yield related characters in a 7 × 7 diallel population of rice

PPF = Percent Pollen fertility, DFF = Days to first flowering, PHT = Plant height (cm), TNH = Tillers/hill, PLT = Panicle

Parent	Character									
	%PF	DFF	PH	TNH	PL	FGP	GL	TGW	GTW	GYH
Basmati	0.78**	1.40**	-1.55ns	0.18ns	2.22**	-1.05 ns	0.38**	0.21 ns	-0.07**	2.08**
Muktagaccha	2.38**	-0.43 ns	9.40**	-1.63**	2.51**	32.20**	0.89**	1.23**	-0.12**	1.58**
Double Rice	-5.27**	5.63**	16.87**	-1.04**	-0.47ns	5.43 ns	0.39**	2.62**	0.02 ns	1.11 ns
Pokkali	-1.90**	-4.43**	-2.60*	2.54**	-0.53ns	-15.34**	-0.28**	-0.36 ns	-0.01 ns	-0.50 ns
BRRI dhan 29	1.32**	-2.04**	-19.73**	-1.04**	-1.14*	-13.44**	-0.05 ns	-1.24**	-0.04 ns	-2.8**
Kotoktara	-2.97**	-1.87**	-15.71**	-1.38**	-2.94**	-40.73**	0.08**	0.03 ns	0.05**	-6.05**
Chinigura	5.66**	1.74**	13.32**	2.37**	0.35ns	32.92**	-1.41**	-2.49**	0.16**	4.57**

length (cm), FGN = Filled grains/panicle, GLT = Grain length (mm), TGW = Thousand grain weight (g), GTW = Grain test weight (g/5 mL), GYP = Grain yield/plant (g)

* Significant at 5% level, ** significant at 1% level, ns: not significant.